

**REMARKS****SUMMARY:**

The present application sets forth original claims 1-26, of which claims 1 and 14 are independent claims. Amendments were previously submitted and requested entry for claims 1 and 14.

Previously Presented and Original claims 1-26 stand rejected under 35 U.S.C. 112, first paragraph as allegedly failing to comply with the written description requirement. Previously Presented and Original Claims 1, 2, 6, 11, 14, 15, 19 and 24 stand rejected under 35 U.S.C. §103(a) as being allegedly obvious over U.S. Patent No. 6,087,930 (Kulka et al.) or U.S. Patent No. 5,731,754 (Lee, Jr. et al.) taken in view of newly cited U.S. Patent No. 5,749,984 (Frey et al.) and at least one of newly cited U.S. Patent No. 5,228,686 (Maleyko) and newly cited U.S. Patent No. 6,438,193 (Ko et al.). Original claims 3 and 16 stand rejected under 35 U.S.C. §103(a) as being allegedly unpatentable over Kulka et al. or Lee, Jr. et al. taken in view of Frey et al.) and at least one of Maleyko and Ko et al. and further in view of U.S. Patent No. 6,474,380 to Rensel et al. Original claims 4, 5, 7-10, 12, 13, 17, 18, 20-23, 25 and 26 stand rejected under 35 U.S.C. §103(a) as being allegedly unpatentable over Kulka et al. or Lee, Jr. et al. taken in view of Frey et al.) and further in view of Patent Application Publication 2004/0159383 (Adamson et al.).

Responses to the rejections summarized above are hereafter provided with respect to each individual argument presented by the Examiner.

**REJECTION OF CLAIMS 1-26 (35 U.S.C. §112, FIRST PARAGRAPH):**

The recent feedback alleges that the material added to claims 1 and 14 "was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession

of the claimed invention.” Applicants strenuously object to such characterization as the material was clearly discussed in the application as filed and particularly illustrated in Figs. 4-10. Particular reference is directed to the material bridging pages 13-14 of the original specification stating:

With reference now to Figs. 4 – 6, there are illustrated, respectively, top, side and end views of a second exemplary embodiment of a tire electronics assembly 41 in accordance with a second embodiment of the presently disclosed subject matter. As best illustrated in Figs. 4 and 5, the second exemplary embodiment of the presently disclosed tire electronics assembly differs from the first embodiment as illustrated in Figs. 1-3 principally by the inclusion of **two batteries 44A, 44B**, each at least partially embedded within the mounting patch portion 42 of the tire electronics assembly 41. As in the first embodiment of the presently disclosed subject matter, the second exemplary electronics assembly embodiment includes a separate mounting patch portion 42 and an electronics portion 46. **Batteries 44A and 44B are separately embedded into the mounting patch portion 42 of the assembly using techniques similar to those of the first embodiment.** In particular, the batteries 44A and 44B are prepared for encasement within the material of the mounting patch portion 42 of the assembly 41 by coating selected portions of the batteries with an adhesive bonding material prior to curing the batteries into the patch material. **As in the first exemplary embodiment of the presently disclosed subject matter, a number of electrical connections may be provided within the mounting patch of the second exemplary embodiment as well as the electronics portion 46 of the tire electronics assembly and may include electrical connections that result in serial or parallel connection of the batteries 44A, 44B as well as connections between the batteries 44A, 44B** and the circuitry portion of the tire electronics assembly and connections from the electronics portion of the tire monitoring assembly to antenna(s) (not shown) which may also be embedded in the mounting patch. These connections are not illustrated in the second embodiment of Figs. 4-6 for simplicity. Also, as in the first embodiment, electrical connection elements may consist of flexible conductive elements such as metallic springs or conductive elastomers as previously described in conjunction with the first exemplary embodiment of the tire monitoring assembly. All electrical connections and elements including batteries, antennas, and all other included electrical components within the mounting patch and electronics portions of the tire monitoring assembly may be encased in or surrounded by non-conductive material as previously defined so as not to adversely impair the operation

of the various elements. And finally, the electronics portion 46 of the tire electronics assembly may be secured to the mounting patch 42 via an adhesive layer 19 as in the first exemplary embodiment or by hook and loop fasteners as also previously mentioned with respect to the first exemplary embodiment. (emphasis supplied)

It should also be noted that the description of a single battery embodiment of the present subject matter clearly discussed terminals 5 and 6 coupled to the battery 4. Particular reference is directed to the material bridging pages 9 and 10 of the original specification stating:

As can be seen most clearly from Figs. 7 and 9, in one exemplary embodiment of the presently disclosed subject matter, battery 4 is supplied with connection terminals 5, 6 which are configured in such a manner as to be secured to opposite sides of battery 4 and bent at selected angles such that the free ends of the connecting terminals 5, 6, i.e. the ends of the connecting terminals 5, 6 opposite to those connected to the battery 4, terminate on the same side of the battery 4. With this configuration of the free ends of the connecting terminals, the battery 4 may be encased in the material forming the mounting patch 2 in such a manner as to permit the free ends of the connecting terminals 5, 6 to be exposed outside the material forming the mounting patch 2. This positioning of the battery 4 and exposed connecting terminals 5, 6 can most clearly be seen in Fig. 9.

Given this original disclosure it is clear that the inventors were, in fact, in full possession of the material presently claimed at the time of the application as they had clearly disclosed terminals 5 and 6 coupled to battery 4 and had clearly indicated and described that similar structure was employed with the dual battery configuration employing batteries 44A, 44B. In light of the above, Applicants respectfully request withdrawal of the rejection under 35 U.S.C. 112, first paragraph.

**REJECTION OF CLAIMS 1, 2, 6, 11, 14, 15, 19 and 24 (35 U.S.C §103(a))**

Previously Presented and Original Claims 1, 2, 6, 11, 14, 15, 19 and 24 stand rejected under 35 U.S.C §103(a) as being allegedly obvious over U.S. Patent No.

6,087,930 (Kulka et al.) or U.S. Patent No. 5,731,754 (Lee, Jr. et al.) taken in view of newly cited U.S. Patent No. 5,749,984 (Frey et al.) and at least one of newly cited U.S. Patent No. 5,228,686 (Maleyko) and newly cited U.S. Patent No. 6,438,193 (Ko et al.).

Before setting forth a discussion of the prior art applied in the recent Office Action, it is believed that a further general discussion of the disclosed subject matter may be helpful as background to a discussion of the specifically claimed subject matter.

In general, the present technology is directed toward methodologies for providing a mounting patch for mounting electronic assemblies to an inner portion of a tire. Prior to the present disclosure, tire electronics mounting patches had provided support for a relatively heavy battery mounted together on a circuit board with the tire electronics. Such previous mounting structures needed to be physically robust and typically requiring a nut and bolt arrangement due primarily to the weight of the battery. The present technology provides for moving heavier elements (one or more batteries) at least partially into the mounting patch thereby providing a lower center of gravity than previous mounting arrangements while separately mounting the remainder of the tire electronics outside the cured rubber corresponding to the mounting patch. Further, the present technology provides a mechanism whereby power terminals coupled to the battery or batteries provide at least partial support for the tire electronics powered by the battery and mounted outside the material at least partially encasing the battery or batteries.

With reference now in particular to the outstanding rejection of Previously Presented and Original Claims 1, 2, 6, 11, 14, 15, 19 and 24 under 35 U.S.C §103(a) as being allegedly obvious over U.S. Patent No. 6,087,930 (Kulka et al.) or U.S. Patent No. 5,731,754 (Lee, Jr. et al.) taken in view of newly cited U.S. Patent No. 5,749,984 (Frey et al.) and at least one of newly cited U.S. Patent No. 5,228,686 (Maleyko) and newly cited U.S. Patent No. 6,438,193 (Ko et al.).

It is noted that the recent Office feedback recognizes, and Applicants agree, that Kulka et al. and Lee, Jr. et al. "... do not provide external accessible terminals." In order to address this deficiency, the recent feedback sites Frey et al. for their disclosure

of rechargeable batteries and opines that "... the advantages of rechargeable batteries would have been understood by the artisan." Applicants readily agree that the use and advantages of rechargeable batteries would be recognized by those of ordinary skill in the art, but Applicants would like to point out **first**; that Frey et al. clearly disclose at column 7, line 60 that "a rechargeable battery ... can be charged by the motion of the tire" thus requiring NO external terminals and **second**; that the presently claimed subject matter is not directed to nor does the specification even discuss recharging of a battery. Rather as provided by the previous **fully supported** amendments to the two independent claims 1 and 14, the terminals are provided "... where by **an electric assembly** may be coupled to the pair of connection terminals **outside the cured rubber**." No variation of either Kulka et al. or Lee, Jr. et al. as potentially modified by Frey et al. would make it obvious one of ordinary skill in the art to **move the electronics** in either Kula et al. or Lee, Jr. et al. outside the cured rubber **as specifically called for in the claims**. Such deficiency is also certainly not cured by either Maleyko or Ko et al.

Respectfully, Maleyko is directed to clearly non-analogous art as it is directed to the charging of a battery inside a lighted ball. Even assuming, *arguendo*, that any relevant teaching could be taken from Maleyko, such would disclose to those of ordinary skill in the art that a connection could be made **through the tire body** to charge the battery of a device mounted **inside the tire**. Clearly such would not be a viable option in a tire environment. It should also be appreciated that the "electronics" in Maleyko's lighted ball is **inside** the ball, not mounted on terminals attached to the battery outside the ball.

As to Ko et al., the recent feedback points to Fig. 3A as disclosing external charging. Respectfully, the only external element illustrated in Fig. 3A is element 310 which is an antenna for a receiver. Attention is directed to column 7, starting with line 63. Antenna 310 is employed to receive signals transmitted from circuitry within the tire. It is not intended, nor is it capable of providing charge to a battery and as such would certainly not provide motivation to one of ordinary skill in the art to charge any battery in either of Kula et al. or Lee, Jr. et al.'s devices even as potentially modified by Frey et al.

In light of the above comments, Applicants respectfully submit that the present fully originally supported claims should be allowed over the cited art. Acknowledgement of the same is earnestly solicited.

**REJECTIONS OF CLAIMS 3-5, 7-10, 12, 13, 16-18, 20-23, 25 and 26 (35 U.S.C. §103(a)):**

With respect to claims 3-5, 7-10, 12-13, 16-18, 20-23, 25 and 26: Based on the arguments presented above with respect to previously submitted claims 1 and 14, Applicants submit that such claims should be allowed over any combination of Kulka et al., Lee, Jr., et al., Frey et al., Maleyko, Ko et al., Rensel et al. and Adamson et al.. Since claims 3-5, 7-10, 12-13, 16-18, 20-23, 25 and 26 variously depend from otherwise allowable claims 1 or 14 and further limit same, claims 3-5, 7-10, 12-13, 16-18, 20-23, 25 and 26 should also be allowed. Acknowledgement of the same is earnestly solicited.


**CONCLUSION:**

Inasmuch as all outstanding issues have been addressed, it is respectfully submitted that the present application, including claims 1-26, is in complete condition for issuance of a formal Notice of Allowance, an action to such effect is earnestly solicited. The Examiner is invited to telephone the undersigned at his convenience should only minor issues remain after consideration of this response in order to permit early resolution of the same or if he has any questions regarding this matter.

Respectfully submitted,

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